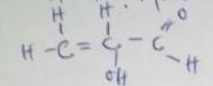


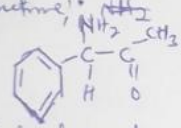
NAME : ARIKEKPAR AZIBAOLA ISRAEL

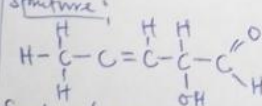
DEPT : AERONAUTICAL & ASTRONAUTICAL ENGINEERING

MATRIC NO : 19/ENG 09/003

CHM 102
Solution

(1)
(i)
 $\text{CH}_2 = \text{C}(\text{OH})\text{H}\text{C}(\text{H})\text{C}(\text{H})\text{O}$
The structural formula:

functional present are:
- Double bond chain = (Alkene)
- OH (hydroxyl group)
- $\text{C}=\text{O}$ (alcohol)

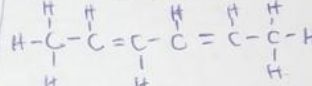
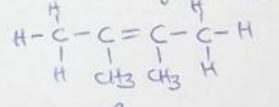
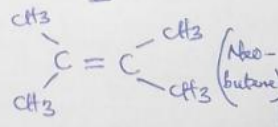
(ii)
 $\text{C}_6\text{H}_5\text{CH}(\text{NH}_2)\text{C}(\text{O})\text{CH}_3$
Structure:

functional present
- phenyl group (C_6H_5) with double bond.
- Amine.
- Alkane / ketone ($\text{C}=\text{O}$)

(iii)
 $\text{CH}_3\text{C} = \text{CHCH}(\text{OH})\text{CH}_3$
Structure:

functional present
- Alkene ($\text{C}=\text{C}$)
- Hydroxyl group (OH)
- Alkane ($\text{C}-\text{H}$)

(2)
Recall:
$$[\alpha]_D^{25} = \frac{\alpha}{l \times c}$$

where
 l = length of sample tube
 c = $\frac{\text{mass}}{\text{volume}}$ ($\frac{\text{g}}{\text{cm}^3}$) or ($\frac{\text{g}}{\text{ml}}$)
 α = observed rotation
$$S_r = \frac{1.0}{1.0 \times \frac{0.056}{11}}$$

$$S_r = \frac{1}{0.00509} = 11.68$$

(3)
(i)
Hexa-2,4-diene.

(ii)
2,3-Dimethylbut-2-ene.

OR
 (Neo-butene)